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# STANDARD CHLORINE OF DELAWARE, INC.

GOVERNOR LEA ROAD • P.O BOX 319 • DELAWARE CITY, DELAWARE 19706

July 20, 1989

100393

Ms. Diane Wehner  
Environmental Scientist  
DNREC  
715 Grantham Lane  
New Castle, DE 19720

Dear Ms. Wehner:

In accordance with Paragraph 6 of the Consent Order between Standard Chlorine of Delaware, Inc. and the Delaware Department of Natural Resources and Environmental Control, we are hereby submitting the Sixth Quarterly Groundwater Monitoring Report.

Please feel free to contact me if you have any questions.

Sincerely,

*Robert J. Touhey/dab*

Robert J. Touhey, P.E.  
Assistant Vice President  
Environmental Affairs

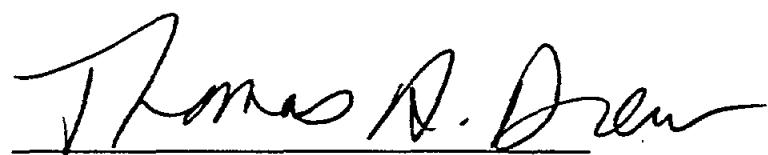
RJT/dab  
Enclosures

cc: A. R. Sinibaldi  
T. E. Pierson  
B. V. Bowers

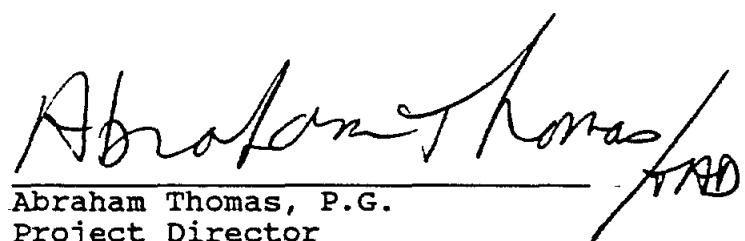
AR307758

QUARTERLY MONITORING REPORT  
GROUND WATER RECOVERY OPERATIONS

STANDARD CHLORINE OF DELAWARE, INC.  
DELAWARE CITY, DELAWARE



Thomas A. Drew, P.G.  
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20 July 1989

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AR307759



QUARTERLY MONITORING REPORT  
GROUND WATER RECOVERY OPERATIONS

STANDARD CHLORINE OF DELAWARE, INC.  
DELAWARE CITY, DELAWARE

In response to the 22 January 1988 Consent Order between the Delaware Department of Natural Resources and Environmental Control (DNREC) and Standard Chlorine of Delaware, Inc., this quarterly report has been prepared to document monthly withdrawal rates and contaminant recovery at the pumping wells; and quarterly sampling results and water level data for the recovery and monitor wells. The report also contains an evaluation of the effectiveness of the recovery system and recommendations to improve the system. Documentation presented in this report covers the quarterly period from April to June 1989.

EVALUATION OF THE RECOVERY SYSTEM

The average monthly withdrawal rates from recovery wells RW-1 through RW-4 are presented in Table 1. Recovery wells RW-1 and RW-4 pumped almost continuously for the quarter, except for short periods of downtime in May and June. Average monthly withdrawal rates at RW-1 and RW-4 ranged between 3.3 and 8.0 gpm.

A replacement pump and water level control device were installed in RW-2 in early April 1989 and this well was brought back into service on April 10. Well RW-2 continued to pump an average of 2.5 gpm through the remaining part of April and into June 1989, at which time it was shutdown for pump system maintenance and well rehabilitation. Following completion of well rehabilitation in late May 1989, recovery well RW-2 was reactivated and pumped throughout June at an average flow rate of 4.4 gpm.

During May 1989, recovery wells RW-1, RW-2 and RW-4 were rehabilitated by mechanical surging and chemical treatment in order to maintain well pumping capacities. The rehabilitation program did result in considerable pumping capacity improvements at well RW-1 and RW-2. For example, prior to the well rehabilitation program, the average monthly withdrawal rates at RW-1 were 3.3 and 4.7 gpm in May and April 1989 respectively. Following rehabilitation of RW-1, the withdrawal rates increased to an average of 8.0 gpm in June. It should be noted that recovery well RW-3 was



not rehabilitated since it was relined with a new well screen and casing on 5 and 6 June 1989. Recovery well RW-3 was brought back into service on 14 June 1989 and had an average withdrawal rate of 7.1 gpm in June.

Ground water level data collected at the recovery and monitoring wells on 30 June 1989 were used to construct a water level contour map presented in Figure 1. This map represents actual water levels observed while the recovery wells were pumping. A complete summary of these water level data is presented in Table 2.

Monthly concentrations of organics recovered at RW-1, RW-2 and RW-4 are presented in Table 3. This data indicates that total organic concentrations recovered at the pumping wells are comparable to concentrations reported from last quarter. The average monthly concentrations of total benzene species at the recovery wells RW-1 and RW-4 ranged from 43 to 83.8 ppm. Recovery well RW-2 showed an average concentration of 230 ppm total benzene species in April. A summary of the total and individual benzene species from the 25 May 1989 sampling event are presented in Tables 4 and 5 respectively. As shown in Figure 2, a isoconcentration map of the total benzene species was prepared using the 25 May 1989 groundwater analytical results. Generally the concentration of total benzenes species for 25 May 1989 is comparable to the concentrations reported in the last quarterly report, with the exception of wells TW-49 and TW-50 which show higher total benzene species concentrations for this quarter.

Summaries of monthly and cumulative groundwater withdrawals and contaminant recovery for each well and for the total recovery system were prepared. These data for individual recovery wells are presented in Tables 6, 7, 8 and 9; the monthly and cumulative results for the entire system are presented in Table 10. It should be noted that although the system was active in 1986, accurate pumping rate data was not available for the recovery wells, therefore the data tables summarize only recovery well pumping rates/contaminant recovery from January 1987 to present. For the period January 1987 to present, cumulative recovery system pumpage is approximately 16.3 million gallons, and total benzene species recovery is estimated to be 4500 kilograms, or approximately 9900 pounds.

#### MODIFICATION OF RECOVERY WELL RW-3

As discussed in the January 1989 quarterly report, replacement of the well screen and casing at recovery well RW-3 was required due to well screen/casing failure. The installation of the new screen and casing inside of existing recovery well RW-3 was conducted on the 5 and 6 June 1989.

The new 6-inch well was emplaced inside of the existing 8-inch diameter well. The base of the new screen was installed at a depth of approximately 61' 7" below the top of the existing 8-inch casing. This level corresponds to the approximate depth of the bottom of the original well screen. The new well components consists of 10 feet of 6-inch diameter, 0.020-inch slot, continuous wound monel screen with a carbon steel bottom-cap, and 52 feet of 6-inch diameter schedule 80 carbon steel riser pipe. The well riser pipe extends from the top of the well screen to a few inches above the top of the existing 8-inch casing. Upon completion of the well component installation, a sandpack was emplaced in the annular space between the existing and new well screen and casing. The sandpack extends from the base of the new well screen to the top of the existing 8-inch casing. The well was then developed using an air lift method for over 4 hours until the discharge water as clear as practical. Upon completion of the well development, the pump system was placed in the well, and RW-3 was reactivated on 14 June 1989.

#### Recommendations

1. Water level control devices which have been ordered for RW-1, RW-3, and RW-4 should be installed so that withdrawal rates at these wells can be increased/maximized without damaging the pumping systems. Maximization of the withdrawal rates will increase the water level drawdown at and in the vicinity of the recovery wells, thereby enhancing the hydrodynamic barrier to contaminant migration.
2. Recovery wells should be routinely rehabilitated to maintain well pumping capacities.
3. Well contractor bids recently received by Standard Chlorine for the installation of a new recovery well near TW6A should be evaluated so that a contractor can be selected to perform the work.

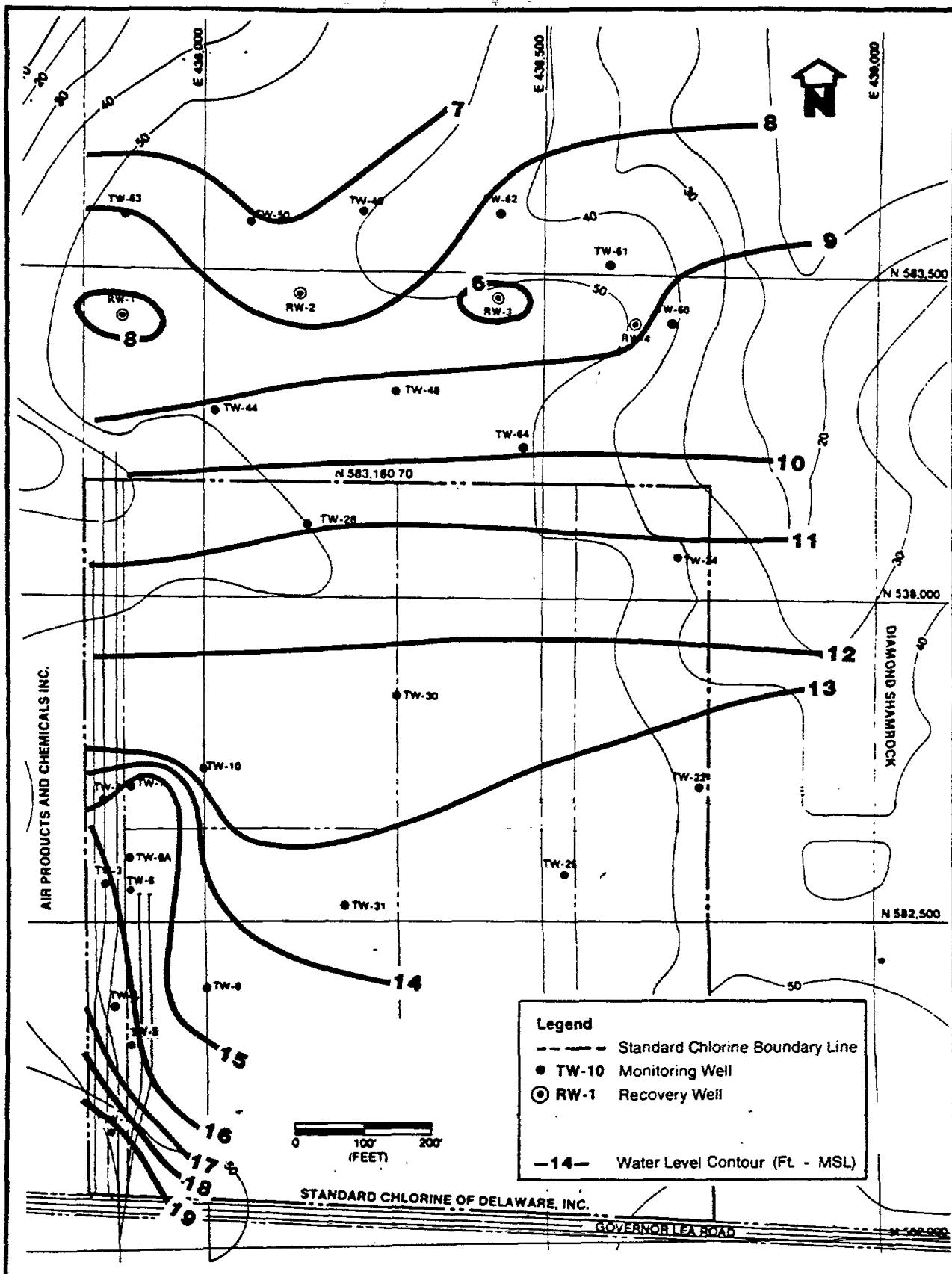


FIGURE 1 WATER LEVEL CONTOUR MAP 30 JUNE 1989

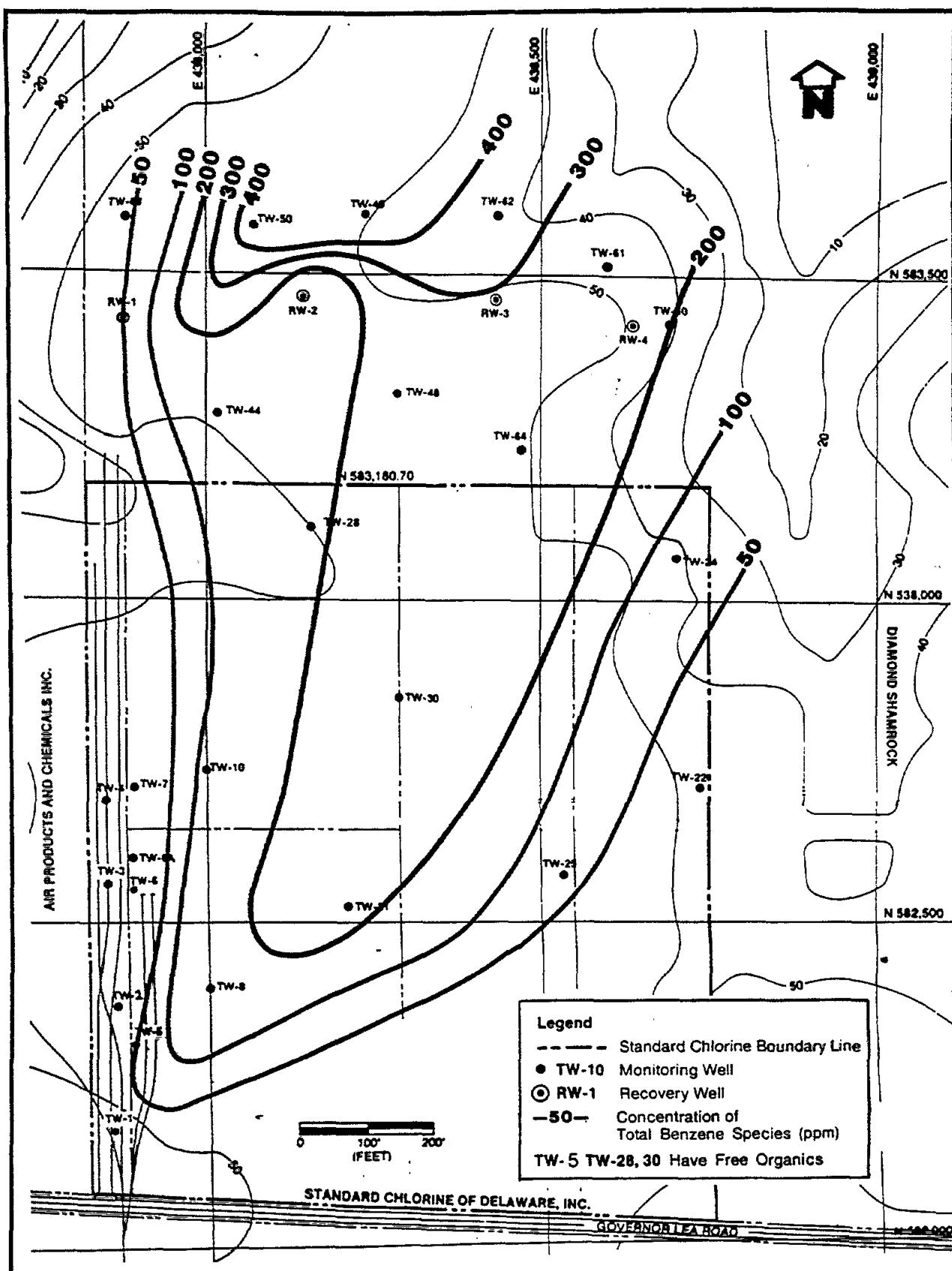


FIGURE 2 ISOCONCENTRATION MAP OF TOTAL BENZENE SPECIES,  
25 MAY 1989

TABLE 1

AVERAGE MONTHLY WITHDRAWL RATES (GPM)  
GROUNDWATER RECOVERY WELL SYSTEM

STANDARD CHLORINE OF DELAWARE, INC.

<u>MONTH (1989)</u>	<u>RW-1</u>	<u>RW-2</u>	<u>RW-3</u>	<u>RW-4</u>
April	4.7	2.5 PD = 10 days	PD = 30 days	5.2
May	3.3 PD = 10 days	2.5 PD = 21 days	PD = 31 days	4.0 PD = 5 days
June	8.0 PD = 1 day	4.4 PD = 1 day	7.1 PD = 13 days	4.3 PD = 2 days

PD - pump down

TABLE 2

GROUNDWATER LEVEL DATA  
STANDARD CHLORINE OF DELAWARE, INC.  
30 JUNE 1989

<u>Location</u>	<u>Measuring Point Elevation (Ft. MSL)</u>	<u>Depth to Water (Ft.)</u>	<u>Groundwater Elevation (Ft. MSL)</u>
TW-1	49.90	30.25	19.65
TW-2	56.10	39.67	16.43
TW-3	56.30	40.17	16.13
TW-4	55.00	40.17	14.83
TW-5	50.10	33.92	16.18
TW-6	50.70	35.00	15.70
TW-7	50.40	35.00	15.40
TW-8	52.20	37.58	14.62
TW-10	50.50	37.67	12.83
TW-22	51.62	38.00	13.62
TW-24	49.44	38.25	11.19
TW-25	49.44	36.17	13.27
TW-28	52.82	41.75	11.07
TW-30	52.29	39.92	12.37
TW-31	50.36	36.92	13.44
TW-49	55.71	47.92	7.79
TW-50	53.28	46.25	7.03
TW-60	46.44	37.00	9.44
TW-61	45.50	37.00	8.50
TW-62	48.92	40.75	8.17
TW-63	53.83	45.83	8.00
TW-64	53.48	43.50	9.98
RW-1	54.75	47.67	7.08
RW-2	52.99	45.42	7.57
RW-3	45.55	40.42	5.13
RW-4	48.08	39.92	8.16

TABLE 3

MONTHLY CONCENTRATIONS OF TOTAL BENZENE SPECIES (ppm)  
GROUNDWATER RECOVERY WELLS

STANDARD CHLORINE OF DELAWARE, INC.

<u>MONTH (1989)</u>	<u>RW-1</u>	<u>RW-2</u>	<u>RW-3</u>	<u>RW-4</u>
April	46.1	230.0	*	83.8
May	43.0	*	*	52.14
June	47.8	*	*	51.1

\* No samples collected - Pump Inoperable during sampling event.

TABLE 4

QUARTERLY SAMPLING RESULTS  
MONITOR AND RECOVERY WELLS

STANDARD CHLORINE OF DELAWARE, INC.

25 MAY 1989

<u>Location</u>	Total Benzene Species Concentrations (PPM)
TW-1	8.08
TW-2	0.26
TW-3	0.30
TW-4	0.77
TW-5	*
TW-6	**
TW-7	26.58
TW-8	185.45
TW-10	128.71
TW-22	5.17
TW-24	80.40
TW-25	58.48
TW-28	*
TW-30	*
TW-31	224.00
TW-49	454.38
TW-50	427.42
RW-1	48.97
RW-2	190.94
RW-3	**
RW-4	233.69

\* Free organics in well

\*\* No samples collected - pump inoperable

TABLE 5  
Water Quality Data  
Individual Benzene Species  
Monitor and Recovery Wells  
Standard Chlorine of Delaware, Inc.  
25 May 1989

WELL	PH	C <sub>6</sub> H <sub>6</sub>	MONO	META	PARA	ORTHO	135	123	NB	1245	1234	MCNB	PENTA	HEXA	TOTAL CHLORO- BENZENES	
															FREE ORGANICS	PUMP DOWN
TW-1	7.0	0.25	3.15	0.24	1.90	2.19	0.10	0.31	0.02	0	0.1	0	0	0	0	8.08
TW-2	6.9	0.03	0.09	0.01	0.06	0.06	0	0.01	0	0	0	0	0	0	0	0.26
TW-3	6.5	0.04	0.09	0.01	0.07	0.08	0	0	0.01	0	0	0	0	0	0	0.30
TW-4	7.5	0.14	0.41	0.04	0.07	0.07	0	0.02	0.01	0	0.01	0	0	0	0	0.77
TW-5	4.4															
TW-6A																
TW-7	6.7	0.44	2.93	2.02	9.98	4.29	0.02	4.29	1.23	0	0.37	0.94	0.02	0.05	0	26.58
TW-8	5.9	28.98	87.58	1.72	5.86	51.21	0	8.90	0.74	0	0.25	0.08	0.04	0.09	0	185.45
TW-10	6.4	40.42	26.83	4.23	45.46	8.14	0.01	0.95	1.31	0	0.17	0.33	0.83	0.03	0	128.71
TW-22	8.2	0.31	1.20	0.11	1.65	1.89	0	0.01	0	0	0	0	0	0	0	5.17
TW-24	8.2	0.50	1.80	1.04	10.55	66.35	0	0.11	0.02	0	0.01	0	0.01	0.01	0	80.40
TW-25	8.2	0.37	0.70	0.76	8.15	46.15	0	1.74	0.20	0	0.21	0.16	0.03	0.01	0	58.48
TW-28	4.7															
TW-30	6.9															
TW-31	7.5	110.35	55.27	2.49	28.35	24.03	0	2.98	0.18	0	0.16	0.07	0.11	0.01	0	224.00
TW-49	5.4	154.93	157.78	7.24	68.86	61.88	0	2.98	0.18	0	0.17	0	0.28	0.07	0.01	454.38
TW-50	5.2	177.31	130.94	8.80	50.22	58.14	0	0.58	0.33	0	0.70	0.21	0.10	0.07	0.02	427.42
RW-1	6.3	6.79	10.27	2.60	18.14	9.70	0	0.99	0.28	0.03	0.14	0.02	0.01	0	0	48.97
RW-2	2.9	68.73	75.98	1.79	22.71	21.72	0	0.01	0	0	0	0	0	0	0	190.94
RW-3																
RW-4	4.8	64.61	72.75	2.75	29.17	53.79	0	0.27	0.08	0.02	0.12	0.06	0.05	0.02	0	233.69

Legend

- C<sub>6</sub>H<sub>6</sub> - Benzene
- MONO - Monochlorobenzene
- META - Metachlorobenzene
- PARA - Paradichlorobenzene
- ORTHO - Orthodichlorobenzene
- 135 - 135 Trichlorobenzene
- 124 - 124 Trichlorobenzene
- 123 - 123 Trichlorobenzene
- NB - Nitrobenzene
- 1245 - 1245 Trichlorobenzene
- 1234 - 1234 Trichlorobenzene
- MCNB - Monochloronitrobenzene
- PENTA - Pentachlorobenzene
- HEXA - Hexachlorobenzene

- All concentrations in mg/L.

TABLE 6  
Monthly and Cumulative Well Pumpage  
and Contaminant Recovery  
Recovery Well RW-1

Month	Average Monthly Pumping Rate (GPM)	Total Monthly Pumpage (gallons)	Cumulative Pumpage (gallons x 1000)	Average Monthly Concentrations of Total Benzene Species Recovered (mg/l)	Total Benzene Species Recovered (Kilograms)	Cumulative Total Benzene Species Recovered (Kilograms)
1987						
January	7.0	141,120	141	134.6	71.9	71.9
February	8.7	175,392	316	106.2	70.5	142.4
March	6.7	241,200	557	108.7	99.2	241.6
April	6.6	256,608	813	111.9	108.7	350.3
May	6.3	281,232	1,094	113.4	120.7	471.0
June	6.1	263,520	1,358	95.2	94.9	565.9
July	5.3	228,960	1,587	116.2	26.6	592.5
August	5.3	106,848	1,694	109.2	44.2	636.7
September	5.0	201,600	1,896	90.9	69.3	706.0
October	5.9	237,888	2,134	94.6	85.2	791.2
November	6.3	263,088	2,397	55.3	55.0	846.2
December	5.9	263,376	2,660	78.2	78.0	924.2
TOTALS			2,660			924.2
1988						
January	6.4	285,696	286	70.8	76.6	76.6
February	6.0	267,840	554	63.2	64.1	140.7
March	6.0	267,840	822	86.4	87.6	228.3
April	5.4	139,968	962	78.04	41.3	269.6
May	5.8	250,560	1,213	41.47	39.3	308.9
June	5.6	241,192	1,455	35.01	32.1	341.0
July	5.3	137,376	1,592	81.30	42.2	383.2
August	4.8	214,272	1,806	65.40	53.0	436.2
September	4.4	190,080	1,996	62.55	45.0	481.2
October	4.84	216,057	2,212	34.59	28.3	509.5
November	4.7	155,664	2,368	56.60	33.3	542.8
December	5.79	258,465	2,626	46.61	45.6	588.4
TOTALS			2,626			588.4

## Recovery Well RW-1 (cont.)

-2-

Month	Average Monthly Pumping Rate (GPM)	Total Monthly Pumpage (gallons)	Total Cumulative Pumpage (gallons x1000)	Average Monthly Concentrations of Total Benzene Species Recovered (mg/l)	Total Benzene Species Recovered (Kilograms)	Cumulative Total Benzene Species Recovered (Kilograms)
1989						
January	5.4	241,056	241	47.29	43.1	43.1
February	4.9	197,568	439	35.09	26.2	69.3
March	4.6	205,344	644	57.9	45.0	114.3
April	4.7	209,808	854	46.1	36.6	150.9
May	3.3	99,792	954	43.0	16.2	167.1
June	8.0	334,080	1,288	47.77	60.4	227.5

Note: 1986 data is not included due  
to inoperable flow meters



TABLE 7  
Monthly and Cumulative Well Pumpage  
and Contaminant Recovery  
Recovery Well RW-2

Month	Average Monthly Pumping Rate (GPM)	Total Monthly Pumpage (gallons)	Cumulative Pumpage (gallons)	Average Monthly Concentrations of Total Benzene Species Recovered (mg/l)		Cumulative total Benzene Species Recovered (Kilograms)
				Total Benzene	Species Recovered (Kilograms)	
January	-	-	-	-	-	-
February	4.0	46,080	46	215.5	37.6	37.6
March	3.2	124,416	170	209.4	98.6	136.2
April	2.2	82,368	252	214.8	67.0	203.2
May	-	-	-	-	-	-
June	-	-	-	-	-	-
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	-	3,024	255	138.9	1.6	204.8
October	2.1	15,120	270	174.2	10.0	214.8
November	2.1	44,640	314	202.0	34.1	248.9
December	1.0					
TOTALS			314			248.9
January	1.1	49,104	49	207.8	38.6	38.6
February	0.9	40,176	89	215.7	32.8	71.4
March	0.1	4,464	93	276.2	4.7	76.1
April	0.6	18,144	111	248.64	17.1	93.2
May	4.2	54,432	165	117.78	24.3	117.5
June	1.8	54,432	219	194.97	40.2	157.7
July	1.0	25,920	245	209.98	20.6	178.3
August	0.4	9,792	255	186.82	6.9	185.2
September	0.2	288	543	235.63	0.3	185.5
October	-	-	-	-	-	-
November	3.98	85,968	629	230.*	74.8	260.3
December	4.6	145,728	775	225.55	124.4	384.7
TOTALS						384.7

**WESTON**

Recovery Well RW-2 (cont.)

-2-

Month	Average Monthly Pumping Rate (GPM)	Total	Monthly Pumpage (gallons)	Total Cumulative Pumpage (gallons)	Average Monthly Concentrations of Total Benzene Species Recovered (mg/l)	Cumulative Total Benzene Species Recovered (Kilograms)
		(gallons)	(gallons)	(gallons)	(mg/l)	(Kilograms)
<b>1989</b>						
January	-	-	-	-	-	-
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	2.5	72,000	72	230,0	62.7	62.7
May	2.5	36,000	108	230,0*	31.3	94.0
June	4.4	183,744	292	230,0*	160.0	254.0

- Pump inoperable

Note: 1986 data is not included due to  
inoperable flow meters.

\* Estimated concentration, sample  
was not collected

TABLE 8  
Monthly and Cumulative Monitor Well Pumpage  
and Contaminant Recovery

## Recovery Well RW-3

Month	Average Monthly Pumping Rate (GPM)	Total Monthly Pumpage (millions)	Cumulative Pumpage (gallons_x1000)	Average Monthly Concentrations of Total Benzene Species Recovered (mg/l)	Total Benzene Species Recovered (Kilograms)	Cumulative Total Benzene Species Recovered (Kilograms)
		(millions)	(gallons_x1000)	(mg/l)	(Kilograms)	(Kilograms)
<b>1987</b>						
January	-	-	-	-	-	-
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	-	-	-	-	-	-
May	6.0	34,560	34	79.4	10.4	10.4
June	5.5	237,600	271	68.5	61.6	72.0
July	5.2	224,640	496	94.8	80.6	152.6
August	5.6	129,024	625	121.6	59.4	212.0
September	5.0	201,600	827	86.5	66.0	278.0
October	5.3	221,328	1,048	81.8	68.5	346.5
November	5.6	233,856	1,281	76.6	67.8	414.3
December	5.1	227,664	1,508	111.6	96.2	510.5
TOTALS			1,508			510.5
<b>1988</b>						
January	5.2	232,128	232	111.3	97.8	97.8
February	4.2	187,488	419	107.9	76.6	174.4
March	3.9	89,856	509	145.8	49.6	224.0
April	4.0	172,800	682	142.74	93.4	317.4
May	4.0	28,800	711	77.41	8.4	325.8
June	-	-	-	-	-	-
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	-	-	-	-	-	-
November	-	-	-	-	-	-
December	-	-	-	-	-	-
TOTALS						

## Recovery Well RW-3 (cont.)

-2-

Month	Average Monthly Pumping Rate (GPM)	Total Monthly Pumpage (gallons)	Cumulative Pumpage (gallons)	Average Monthly Concentrations of Total Benzene Species Recovered (mg/l)		Cumulative Total Benzene Species Recovered (Kilograms)
				Total Benzene (gallons x 1000)	Species Recovered (Kilograms)	
January	-	-	-	-	-	-
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	-	-	-	-	-	-
May	-	-	-	-	-	-
June	7.1	184,032	184	77*	77*	53.6

- Pump inoperable

Note: 1986 data is not included  
due to inoperable flow meters

\* Estimated concentration, sample was not collected.

TABLE 9  
Monthly and Cumulative Well Pumpage  
and Contaminant Recovery  
Recovery Well RW-4

Month	Average Monthly Pumping Rate (GPM)	Total Monthly Pumpage (gallons)	Cumulative Pumpage (gallons x 1000)	Average Monthly Concentrations of Total Benzene Species Recovered (mg/l)			Cumulative Total Benzene Species Recovered (Kilograms)
				Total Benzene Species Recovered (Kilograms)	Total Benzene Species Recovered (Kilograms)	Cumulative Total Benzene Species Recovered (Kilograms)	
<b>1987</b>							
January	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-
June	9.1	380,016	380	46.3	66.6	66.6	66.6
July	8.7	375,840	755	60.2	85.6	152.2	152.2
August	8.2	188,928	944	72.4	43.0	195.2	195.2
September	7.6	306,432	1,250	64.7	75.0	270.2	270.2
October	7.7	310,464	1,560	61.9	72.7	342.9	342.9
November	8.4	350,784	1,910	45.7	60.7	403.6	403.6
December	9.3	415,152	2,325	67.8	106.5	510.1	510.1
TOTALS			2,325			510.1	
<b>1988</b>							
January	8.6	383,904	383	57.8	84.0	84.0	84.0
February	8.4	374,976	757	58.5	83.0	83.0	167.0
March	5.9	263,376	1,020	83.0	82.7	82.7	249.7
April	6.1	263,520	1,284	81.01	80.8	80.8	330.5
May	6.1	79,056	1,363	45.35	13.6	13.6	344.1
June	5.8	250,560	1,613	50.27	47.7	47.7	391.8
July	4.7	121,824	1,734	47.95	22.1	22.1	413.9
August	4.7	209,808	1,943	77.69	61.7	61.7	475.6
September	5.6	241,920	2,184	64.60	59.1	59.1	534.7
October	4.8	214,272	2,398	42.02	34.1	34.1	568.8
November	5.7	188,784	2,587	55.18	39.4	39.4	608.2
December	5.9	258,912	2,845	54.13	53.0	53.0	661.2
TOTALS			2,845				661.2

Recovery Well RW-4

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Month	Average Monthly Pumping Rate (GPM)	Total Monthly Pumpage	Cumulative Pumpage (gallons)	Average Monthly Concentrations of Total Benzene Species Recovered (mg/l)	Total Benzene Species Recovered (Kilograms)	Cumulative Total Benzene Species Recovered (Kilograms)
		(gallons)	(gallons x 1,000)	(mg/l)	(Kilograms)	(Kilograms)
<b>1989</b>						
January	6.3	281,232	281	44.02	46.9	46.9
February	7.1	286,272	567	35.09	38.0	84.9
March	5.5	245,520	813	61.28	56.9	141.8
April	5.2	224,640	1,037	83.8	71.3	213.1
May	4.0	149,760	1,187	52.14	30.0	243.1
June	4.3	173,376	1,360	51.1	33.5	276.6

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TABLE 10  
Monthly and Cumulative Monitor Well Pumpage  
and Contaminant Recovery  
Recovery Well RW-1, 2, 3, and 4

Month	Total Monthly Pumpage (gallons x 1000)	Cumulative Pumpage (gallons x 1000)	Total Benzene Species Recovered (kilograms)		Cumulative Total Benzene Species Recovered (kilograms)
			Total	Cumulative	
January	141	141	71.9	71.9	71.9
February	175	316	70.5	142.4	142.4
March	287	603	136.8	279.2	279.2
April	380	983	207.3	486.5	486.5
May	397	1,380	198.1	684.5	684.5
June	880	2,260	223.1	907.7	907.7
July	827	3,087	192.8	1100.5	1100.5
August	423	3,510	146.6	1247.1	1247.1
September	708	4,218	141.0	1388.1	1388.1
October	771	4,989	228.0	1616.1	1616.1
November	861	5,850	193.5	1809.6	1809.6
December	950	6,800	314.8	2124.4	2124.4
TOTALS 1987		6,800			
1988					
January	949	949	949	297.0	297.0
February	868	1,817	256.5	553.5	553.5
March	623	2,440	224.6	778.1	778.1
April	592	3,032	232.6	1010.7	1010.7
May	411	3,443	85.6	1096.3	1096.3
June	545	3,988	120	1216.3	1216.3
July	283	4,271	84.9	1301.2	1301.2
August	432	4,703	121.6	1422.8	1422.8
September	431	5,134	104.4	1527.2	1527.2
October	430	5,564	62.4	1589.6	1589.6
November	428	5,992	72.7	1662.3	1662.3
December	661	6,653	223	1885.3	1885.3
TOTALS 1988		6,653			

## Recovery Wells RW-1,2,3,4 (cont)

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Month	Total Monthly Pumpage (gallons x 1000)	Cumulative Pumpage (gallons x 1000)	Total Benzene Species Recovered (kilograms)	Cumulative Total Benzene Species Recovered (kilograms)
1989				
January	522	522	90.0	90.0
February	483	1,005	64.2	154.2
March	450	1,455	101.9	256.1
April	505	1,960	170.6	426.7
May	284	2,244	46.2	472.9
June	874	3,118	93.9	566.8